

INVENTION DISCLOSURE DATA SHEET

Invention Title: Nozzle shut off pressure compensation in filler tubeDate Conceived: September 23, 1995First Disclosure: September 29, 1995 Glenn K. Walker (UST)
(Persons and Dates)First Sketch or Drawing: October 2, 1995 (Attached)
(Date and Present Location)First Written Description (if any): October 2, 1995 (Attached)
(Date and Present Location)Date Prototype Constructed or Process Performed (if any): NA ADDED 4/1/03
CURRENTLY BUILDING prototype for testingDescription of Use: The spout/shut off mechanism of a nozzle is altered so the shut off mechanism will function with the presence of vacuum or pressure in the filler neck, such as may occur with onboard vapor recovery systems on autos.Description of Construction and Operation: (Use additional paper if necessary and refer to attached copies of sketches or drawings.) Current mechanical shut off mechanisms for nozzles consist of a diaphragm operated shut off mechanism, one side of which vents to atmospheric pressure at the nozzle, the other vented to a vacuum producing poppet valve, which in turn vents to the atmosphere at the end of the nozzle spout. (See sketch) This invention vents both sides of the diaphragm at the end of the spout. Two separate passageways would lead from the end of the spout, one leading to the vacuum producing device, then to one side of the diaphragm, the other passageway leading to the opposite side of the diaphragm. (See sketch 2)First Offer For Sale (if any): NA

(Date and Customer)

First Public Disclosure (if any): NA(Including Trade Show or)
(Printed Publication)

(Date and Location)

(OVER)

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Closest Prior Art Known: (Identify Patent #'s?) Current mechanical release mechanisms where one side of diaphragm is vented to the Venturi/poppet, then to the end of the spout, and the other side of the diaphragm is vent to the atmosphere somewhere through the nozzle body. There are also electronic shut off means (Saber) which sense the presence of fluid at the spout.

Advantages of Invention Over Known Prior Art: (List 1, 2, 3 etc.)

1. In the near future, Automobiles will be equipped with on board vapor recovery systems, which will necessarily have some sort of "Seal" between the spout and filler neck to prevent the escape of vapors to the atmosphere. With the configuration of current mechanical nozzle shut off mechanisms, any pressure ^{in the filler neck} or vacuum (relative to atmospheric pressure) could adversely affect the operation of the shut off, causing either premature shut off with a vacuum present, or no shut off with pressure present. By venting both sides of the shut off diaphragm in the same area in

(continued on attached)

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Signature of Witness(es) Who Understand The Invention:

<u>Full Name</u>	<u>Address</u>	<u>Date</u>

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the filler neck, the shut off diaphragm will not sense that there is any pressure or vacuum present in the filler neck (relative to atmospheric pressure) and the shut off mechanism will operate in a normal manner.

2. This method of venting the diaphragm allows retaining the mechanical shut off mechanism without modification, such as ~~going~~ converting to an electronic means.

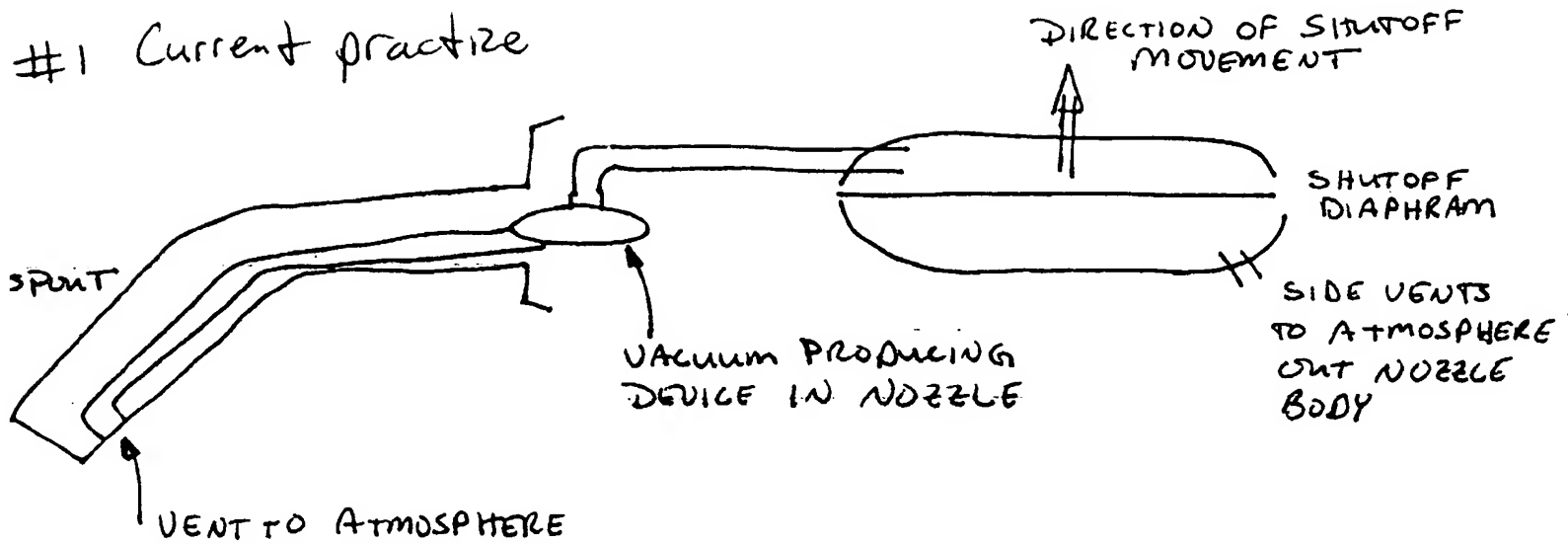
NEW 4/1/03
ADDITION

what we are going to do with our nozzle is functionally the same. The back side of the diaphragm will be vented into the vapor path of the nozzle instead of a separate tube into the spout.

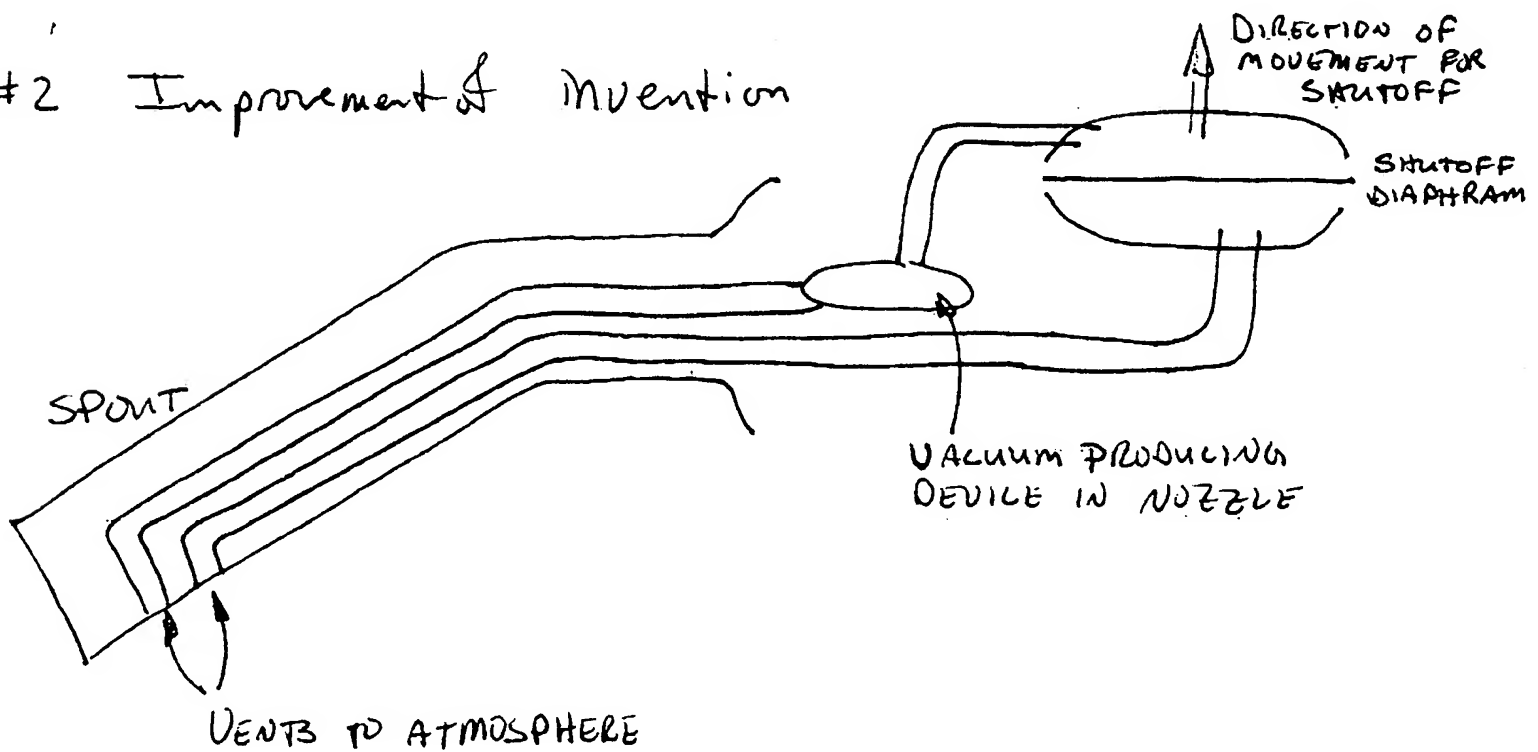
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#1 Current practice



#2 Improvement of invention



The vents may be positioned in several ways, they only need to be in the same area of the filler pipe relative to any pressure variations that are present.

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